

(a) an adenovirus; and

(b) a component recognizing CD40 antigen comprising a first antibody, or antigen-binding fragment thereof, that binds to a fiber-knob protein of said adenovirus, wherein said first antibody or antigen-binding fragment thereof is attached to a second antibody, or
5 antigen-binding fragment thereof, that binds to CD40 antigen.

Please amend claim 3 as follows:

3. (amended) The gene delivery system of claim 1,
10 wherein said first antibody and second antibody are genetically fused together.

Please amend claim 4 as follows:

4. (amended) The gene delivery system of claim 1,
15 wherein said antibody directed against CD40 antigen is secreted from hybridoma selected from the group consisting of G28.5 (ATCC #9110-HB) and FGK45.

Please amend claim 5 as follows:

20 5. (amended) The gene delivery system of claim 1,
wherein said gene delivery system mediates an effect selected from

the group consisting of transduction of said CD40⁺ immune cells, immunomodulation of said CD40⁺ immune cells, and maturation of said CD40⁺ immune cells.

5 Please amend claim 9 as follows:

9. (amended) The gene delivery system of claim 1, wherein said CD40⁺ immune cells are selected from the group consisting of dendritic cells and B cells.

10 Please amend claim 11 as follows:

11. (amended) A method for genetically manipulating CD40⁺ immune cells in an individual in need of such treatment, comprising the step of:

administering the gene delivery system of claim 1 to said individual, wherein said gene delivery system mediates gene transduction and causes maturation of said immune cells.

Please amend claim 14 as follows:

14. (amended) A method for genetically manipulating CD40⁺ immune cells in an individual in need of such treatment,

administering the gene delivery system of claim 6 to said individual, wherein said gene delivery system mediates gene transduction and causes maturation of said immune cells.

5 Please amend claim 17 as follows:

17. (amended) A method for enhancing dendritic cell-based vaccination in an individual in need of such treatment, comprising the step of:

administering the gene delivery system of claim 1 to said individual, wherein said gene delivery system increases vaccination efficacy of CD40⁺ dendritic cells in said individual.

Please amend claim 21 as follows:

15 21. (amended) A method for enhancing dendritic cell-based vaccination in an individual in need of such treatment, comprising the step of:

administering the gene delivery system of claim 6 to said individual, wherein said gene delivery system increases vaccination efficacy of CD40⁺ dendritic cells in said individual.

Please amend claim 31 as follows:

31. (amended) A recombinant adenoviral vector,
comprising:

a genetically modified adenovirus having a fiber protein
5 comprising CD40 ligand, wherein said CD40 ligand targets said vector
to CD40.

Please amend claim 33 as follows:

33. (amended) The recombinant adenoviral vector of
10 claim 31, wherein the fiber shaft of said fiber protein is replaced by
bacteriophage T4 fibritin protein.

Please amend claim 34 as follows:

34. (amended) A gene delivery system for CD40⁺
15 immune cells, comprising:

the recombinant adenoviral vector of claim 31.

Please amend claim 35 as follows:

35. (amended) The gene delivery system of claim 34,
20 wherein said gene delivery system mediates an effect selected from
the group consisting of transduction of said CD40⁺ immune cells,

immunomodulation of said CD40⁺ immune cells, and maturation of said CD40⁺ immune cells.

Please amend claim 36 as follows:

5 36. (amended) The gene delivery system of claim 34,
wherein said CD40⁺ immune cells are selected from the group
consisting of dendritic cells and B cells.

Please amend claim 40 as follows:

10 40. (amended) A method for enhancing dendritic cell-
based vaccination in an individual in need of such treatment,
comprising the step of:

 administering the gene delivery system of claim 34 to
said individual, wherein said gene delivery system increases
15 vaccination efficacy of CD40⁺ dendritic cells in said individual.

Please amend claim 43 as follows:

 43. (amended) A method for enhancing dendritic cell-
based vaccination in an individual in need of such treatment,
20 comprising the step of:

administering the gene delivery system of claim 38 to said individual, wherein said gene delivery system increases vaccination efficacy of CD40⁺ dendritic cells in said individual.

5 Please amend claim 46 as follows:

46. (amended) The recombinant adenoviral vector of claim 31, wherein said CD40 ligand comprises the globular domain of CD40 ligand.

10 Please amend claim 47 as follows:

47. (amended) A gene delivery system for CD40⁺ immune cells, comprising:

the recombinant adenoviral vector of claim 46.

15 Please amend claim 48 as follows:

48. (amended) The gene delivery system of claim 47, wherein said gene delivery system mediates an effect selected from the group consisting of transduction of said CD40⁺ immune cells, immunomodulation of said CD40⁺ immune cells, and maturation of
20 said CD40⁺ immune cells.

Please amend claim 49 as follows:

49. (amended) The gene delivery system of claim 47, wherein said CD40⁺ immune cells are selected from the group consisting of dendritic cells and B cells.

5

Please amend claim 53 as follows:

53. (amended) A method for enhancing dendritic cell-based vaccination in an individual in need of such treatment, comprising the step:

10 administering the gene delivery system of claim 47 to said individual, wherein said gene delivery system increases vaccination efficacy of CD40⁺ dendritic cells in said individual.

Please amend claim 55 as follows:

15 55. (amended) A method for enhancing dendritic cell-based vaccination in an individual in need of such treatment, comprising the step:

administering the gene delivery system of claim 51 to said individual, wherein said gene delivery system increases
20 vaccination efficacy of CD40⁺ dendritic cells in said individual.